

Application No. 10/627,491
Response to Office Action of May 18, 2005

REMARKS/ARGUMENTS

In the Office Action of May 18, 2005, claims 1, 2, 6-8, 11 and 12 stand rejected and claims 22, 23, 25, and 26 are objected to. In this response claims 1, 20, 22, and 25 have been amended in this response. Reconsideration and allowance of all pending claims are respectfully requested in view of the following remarks. No new subject matter is being added by this response.

I. CLAIM REJECTIONS.

A. 35 U.S.C. § 112 Rejections.

Claims 1 and 20 stand rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to point out and distinctly claim the subject matter that the Applicant regards as the invention.

Considering claims 1 and 20, the Examiner argued that claim 1 recites the step of calculating a return path route to overfly the new candidate active way point, but that this conflicts with the specification that indicates there are times when a return path can not be calculated. Claims 1 and 20 have been amended, to recite, in part, "calculating a return-to-path route to overfly the new candidate active waypoint if the aircraft is in a capture zone," rendering this rejection moot. Accordingly, Applicant respectfully requests withdrawal of the rejection under 35 U.S.C. 112, second paragraph.

B. 35 U.S.C. § 103 Rejections.

To establish a prima facie case of obviousness under 35 U.S.C. § 103, three requirements must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. M.P.E.P. 2143. Because the Examiner has not established a prima facie case of obviousness the Applicant respectfully traverses this rejection.

1. Onken in view of known art.

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Claims 1, 6, 11-12, 16 and 20 stand rejected under 35 U.S.C. § 103, as obvious under U.S. Patent No. 6,163,744 to Onken (*Onken*). Applicants respectfully traverse these rejections.

Onken discloses a method for automatically resolving discontinuities that occur when an aircraft is maneuvered off course from a planned flight path. A discontinuity is a flight path that is incomplete and can not be followed continuously to the end. (Col. 3, lines 31-37). To resolve the discontinuity, *Onken* uses a search-and-selection procedure along with a navigational database. (Col. 3, lines 47-51).

Considering claim 1, *Onken* does not disclose, teach or suggest the step of "choosing a first waypoint from the waypoints of the pre-planned lateral route as a new candidate active waypoint if the aircraft is on the TO side of the wayline of the first waypoint" or "choosing a second waypoint from the waypoints of the pre-planned lateral route as a new candidate active waypoint, the second waypoint following after the first waypoint, if the aircraft is between the wayline of the first waypoint and the wayline of the second waypoint." This is conceded by the Examiner. The Examiner argues, however that *Onken* encompasses teaching calculating the return path to the next waypoint. However, while *Onken* describes criteria for its search algorithm (Col. 3, line 6 to Col. 4, line 32), it does not disclose selecting waypoints that are part of the original flight plan based on aircraft position. Instead, *Onken* determines a new flight path with new waypoints, stating: "the flight path up to this point is expanded by new path elements." (Col. 3, lines 60-61). Then, a search algorithm is run to determine the new path. As explained in conjunction with FIG. 11, *Onken* determines the new path by evaluating new points that were not part of the original plan as well as waypoints from the original plan. This selection process in no way ever considers if the aircraft is on the TO side of the wayline of the first waypoint, nor does *Onken* disclose, teach, or suggest a selection of a waypoint based on the position to the wayline of the original waypoint.

FIG. 11 provides an example that illustrates an example of how the process in *Onken* works. *Onken* choose a return path of P1 (a new waypoint) to P2 (another new waypoint that is not part of the original flight plan) to P4 (back to the original flight plan to facilitate an approach to landing). Had *Onken* covered selecting the next waypoint that is part of the original flight plan, after the plan overflow P1; P3, the next waypoint after the P1 that is part of the preplanned route would have been selected, instead of P2. The Examiner argues this is only because in the

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given scenario the path P1 to P2 was optimal and that might change. But if *Onken* was truly prior art against the present invention, it should reach the same paths at all times.

Additionally, the Examiner argues that it would have been obvious to one of skill in the art to eliminate the process of selecting return path routes with better association with the standard route of *Onken* to select automatically the next waypoint as the point on the return path the aircraft will overfly.

The Examiner's proposed modification would change the principal of operation of *Onken*. *Onken* is drawn to an algorithm that is used to find a return path. Among the important parts of *Onken*'s algorithm is generating return paths with better association to the standard route and with a minimum of diversions to deal. To eliminate the use of the algorithm changes the way *Onken* works as the algorithm is the invention of *Onken*. The Examiner indicates that the algorithm of *Onken* can be eliminated when an association with standard routes is not necessary. However, the only way to determine that *Onken*'s algorithm would produce a return path that includes the next waypoint on the return path is to run the algorithm, indicating the algorithm is always needed. Thus, the proposed modification of *Onken* would change the way in which *Onken* works. Thus, the Examiner has failed to show a prima facie case for obviousness. As noted in section 2143 of the MPEP: "If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims prima facie obvious. In re Ratti, 270 F.2d 810, 123 USPQ 349 (CCPA 1959)." This argument was discussed previously but not responded to by the Examiner.

Further, claim 1, as amended, recited in part "calculating a return-to-path route to overfly the new candidate active waypoint if the aircraft is in a capture zone." *Onken* does not disclose, teach, or suggest a capture zone or that a route is calculated if it is in the capture zone.

Claim 20 stands rejected for the same reasons as claim 1. Therefore, in light of the above arguments, claim 20 and its dependent claims are in condition for allowance.

Considering claim 6, claim 6 depends from allowable claim 1. For at least this reason, claim 6 is allowable.

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Considering claims 11-12, claims 11-12 depend from claim 20. Since claim 20 is in condition for allowance, claims 11-12 are allowable.

Claim 16 stands rejected for the same reason as claim 6. For at least the reasons already discussed, claim 16 is in condition for allowance.

2. Onken in view of Hirote

Claims 2 and 19 stand rejected under 35 U.S.C. 103(a) as unpatentable over *Onken* et al. in view of *Hirote* et al. (*Hirote*). Claims 2 and 19 depend from allowable claim 1 and 20. Therefore, claims 2 and 19 are in condition for allowance.

3. Onken in view of Dies

Claims 7-8, and 17-18 stand rejected under 35 O.K. 103(a) as unpatentable over *Onken* in view of U.S. patent No. 5,568,390 to *Dies* (*Dies*).

Claims 7-8 and 17-18 depend from allowable claims 1 and 20. For at least this reason, claims 7-8 and 17-18 are in condition for allowance.

4. Onken in view of Dies in view of Hirote

Claim 19 stand rejected under 35 U.S.C. 103(a) as unpatentable over *Onken* in view of *Dies* and further in view of *Hirote*.

Claim 19 depends from allowable claim 20. For at least this reason, claim 19 is in condition for allowance.

II. ALLOWABLE MATERIAL.

The applicants appreciate that claims 22-23 and 25-26 would be allowable if rewritten in independent form including all limitations of the base claim and any intervening claim.

Applicants note that since claims 22-23 and 25-36 depend from allowable claims 1 and

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20, claims 22-23 and 25-26 are allowable for this reason as well, there is no reason to make the suggested amendments.

III. CONCLUSION.

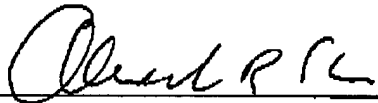
For the foregoing reasons, the present application is believed to be in condition for allowance and favorable action is respectfully requested. The Examiner is invited to telephone the undersigned at the telephone number listed below if it would in any way advance prosecution of this case.

While no other fees are believed due, the applicant hereby requests that any other required fee to maintain pendency of this case, except for the Issue Fee, be charged to Deposit Account 50-2091.

Respectfully submitted,

July 29, 2005
Date

By



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